Enterasys Matrix® N5

POE Chassis (7C105-P)

Hardware Installation Guide

P/N 9033943-04

enterasys®

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

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Regulatory Compliance Information

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This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Clase A. Aviso de ITE

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Klasse A ITE Anmerkung

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This product complies with the following: UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

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Produktsicherheit

Dieses Produkt entspricht den folgenden Richtlinien: UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Electromagnetic Compatibility (EMC)

This product complies with the following: 47 CFR Parts 2 and 15, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3.

Compatibilidad Electromágnetica (EMC)

Este producto de Enterasys cumple con lo siguiente: 47 CFR Partes 2 y 15, CSA C108.8, 2004/108/EC, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, VCCI V-3.

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Hazardous Substances

This product complies with the requirements of European Directive, 2002/95/EC, Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment.

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In accordance with Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required and that this product was placed on the European market after August 13, 2005, the date of enforcement for Directive 2002/96/EC.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

   For information about the available collection system, please go to www.enterasys.com/support/ or contact Enterasys Customer Support at 353 61 705586 (Ireland).

产品说明书附件
Supplement to Product Instructions

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	×	○	○	×	○	○
电路模块 (Circuit Modules)	×	○	○	×	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	×	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	×
电路开关 (Circuit Breakers)	○	○	×	×	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

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Safety Information
Class 1 Laser Transceivers

The single mode interface modules use Class 1 laser transceivers.
Read the following safety information before installing or operating these modules.

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 Laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55 x 10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or 8 x 10^{3} W m^{2} sr-1.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Declaration of Conformity

Application of Council Directive(s):	**2004/108/EC** **2006/95/EC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Address:	**Enterasys Networks, Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 2004/108/EC** **EN 55022** **EN 61000-3-2** **EN 61000-3-3** **EN 55024** **EC Directive 2006/95/EC** **EN 60950** **EN 60825**
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About This Guide

This guide lists the Enterasys Matrix® N5 7C105-P features, options, specifications, and instructions to install the Matrix N5 7C105-P chassis on a flat surface or in a standard 19-inch equipment rack or cabinet. This guide also explains how to interpret the system status LEDs to facilitate troubleshooting when necessary, and also provides information on how to contact Enterasys Networks for additional help.

Note: In this guide,

- N5 chassis or *7C105-P* refers to the Enterasys Matrix N5 7C105-P chassis.
- N-POE PSM refers to the N-POE-1200 W power supply module.
- *PD* refers to a Powered Device.
- *7C205-1* refers to the chassis *7C20*5-1 AC power supply module.

Who Should Use This Guide

This guide is intended for a nework administrator responsible for installing and setting up the 7C105-P chassis.

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Eléctrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

How to Use This Guide

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the N5 chassis. A general working knowledge of data communications networks is helpful when setting up the chassis.

To locate information concerning various subjects in this guide, refer to the following table:

For information about...	Refer to page...
Features and capabilities of the 7C105-P chassis, and how to get help	1-1
Installation site requirements, configuration guidelines, and operating specifications for the chassis enclosure, AC power supply modules, and PoE power supply modules.	2-1
Instructions for unpacking the chassis, installing the chassis as a standalone unit or in a rack, installing the cable management bar; installing the system and PoE power supply modules; removing and reinstalling the fan tray; powering up the 7C105-P chassis; and special instructions to meet the Telcordia GR-1089 Section 9, Bonding and Grounding Requirements, as needed.	3-1
Environmental and operating specifications for the N5 chassis and power supply modules.	A-1

Related Documents

Hardware installation and user guides have been developed for the DFE-Platinum (7xxxxx) and DFE- Gold (4xxxxx) series modules installed in the 7C105-P chassis.

Note: The 7C105-P chassis supports the DFE (Distributed Forwarding Engine) 7xxxxx and 4xxxxx series modules, but does not support the older 6x1xx, 6x2xx, and 6x3xx series of modules.

The DFE series module hardware installation guides explain how to install the modules into the 7C105-P chassis, attach cable segments to the modules, and module specifications. Command Line Interface (CLI) configuration guides describe how to configure the modules after the hardware installation is complete.

Each manual in this set assumes that the qualified personnel installing the module has a general working knowledge of data communications networks and their physical layer components.

Manuals can be accessed on the World Wide Web, using the following URL:

http://www.enterasys.com/support/manuals/

Conventions Used in This Guide

The following conventions are used in this guide:

Note: Calls the reader's attention to any item of information that may be of special importance.

Caution: Contains information essential to avoid damage to the equipment.

Precaución: Contiene información esencial para prevenir dañar el equipo.

Achtung: Verweißt auf wichtige Informationen zum Schutz gegen Beschädigungen.

Electrical Hazard: Warns against an action that could result in personal injury or death due to an electrical hazard.

Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

Elektrischer Gefahrenhinweis: Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!

Warning: Warns against an action that could result in personal injury or death.

Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte.

Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!

1

Introduction

This chapter provides a functional overview of the Enterasys Matrix N5 chassis and its features. Also covered in this chapter are the instructions on how to obtain additional help from Enterasys Networks, if needed.

For information about...	Refer to page...
Enterasys Matrix N5 Chassis 7C105-P Overview	1-2
Enterasys Matrix N5 Chassis Modules	1-4
Chassis Cooling System	1-4
Chassis Power Systems	1-4
Power Classifications and Deployment	1-7
Getting Help	1-10

Enterasys Matrix N5 Chassis 7C105-P Overview

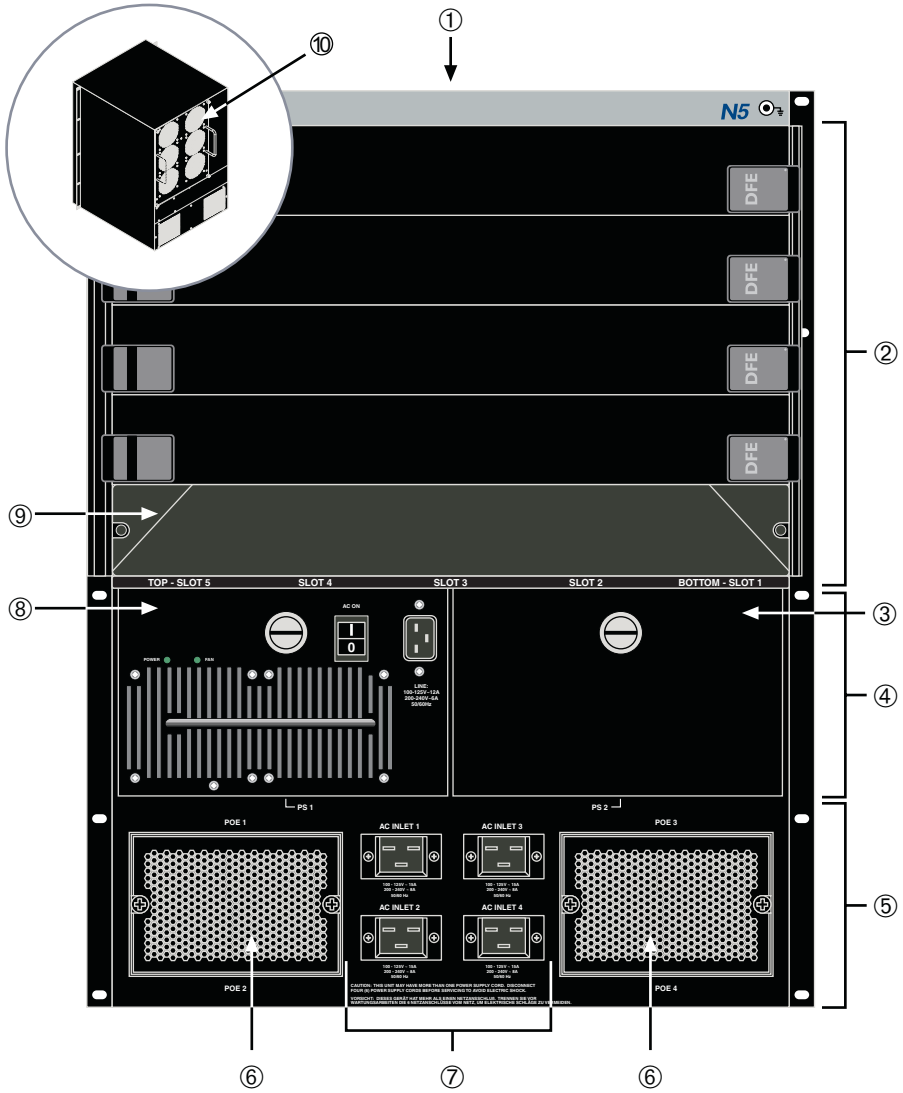
The Enterasys Matrix N5 chassis provides five slots for a new advanced generation of Ethernet switch modules, the Enterasys Matrix DFE series modules. DFE modules installed in the 7C105-P chassis operate as a system with a single IP address. The modular design of the chassis enables you to install the system and PoE power supplies, and modules from the front of the chassis for ease of maintenance.

The N5 chassis

- uses a distributed switching architecture,
- allows hot swapping of the DFE modules,
- supports redundant chassis system power supplies,
- supports up to four AC/DC 48-Volt 300-Watt power supply modules for PoE operation,
- can be installed as a freestanding unit or installed into a standard 48.26-centimeter (19-inch) rack (three chassis can fit into a standard 7-foot rack),
- meets protective earth grounding requirements of the National Electrical Code (NEC) UL 60950 and IEC 60950 standards,
- has a removable fan assembly, which is hot-swappable from the rear of the chassis,
- is a modular design that enables you to install the system and PoE power supplies, and modules from the front of the chassis for ease of maintenance, and
- has all LED status indicators observable from the front of the chassis to aid in monitoring network operational status and performing maintenance.

Figure 1-1 shows the N5 chassis equipped with one 1200-Watt 7C205-1 redundant power supply.

Figure 1-1 Enterasys Matrix N5 Chassis with One 7C205-1 AC Power Supply



1 N5 chassis (7C105-P)
2 Module slots (5 total)
3 Blank plate (covers empty 7C205-1 power supply bay)
4 Chassis power supply system (can support up to two 7C205-1s)
5 PoE power supply system (can support up to four N-PoE-1200Ws)
6 PoE power supply module cover (each one covers two bays for optional N-POE PSMs)
7 AC power input connectors for the optional N-PoE-1200W power supplies
8 Power supply (7C205-1)
9 Module slot 1 (Chassis is shipped without plate over this slot.)
10 Chassis cooling system consisting of a four-fan assembly (rear view of chassis)

Enterasys Matrix N5 Chassis Modules

The N5 chassis has five slots for the new Matrix DFE series modules with or without PoE capability.

Note: The N5 chassis supports the DFE (Distributed Forwarding Engine) 7xxxxx or 4xxxxx series modules, but it does not support the older 6x1xx, 6x2xx, and 6x3xx series of modules. Do not mix 7xxxxx and 4xxxxx series modules in the same chassis.

Chassis Cooling System

The N5 chassis features a removable four-fan assembly that is accessible from the rear of the chassis. This unit is hot swappable, which allows it to be replaced without powering down the chassis. A LANVIEW LED located on the front of the chassis indicates the operating status of the fan assembly (normal/fault/not installed). Refer to Chapter 2 for a full description of the fan assembly LED states.

Chassis Power Systems

The N5 chassis supports two 7C205-1 power supplies that reside in the lower section of the chassis, in slots labeled PS1 and PS2. The second power supply provides redundancy and load sharing. These power supplies operate independently from the optional PoE power supply modules described in "POE Power Supply System" on page 1-5. The optional PoE power supply modules provide power to support the Power over Ethernet feature in PoE-compliant DFE modules installed in the chassis.

N5 Chassis Power Supply System

The 7C205-1 is a 1200 Watt power supply, which has one front-panel AC input power connector. This allows the connection of each power supply to a separately fused AC power source. One power cord is shipped with the 7C205-1. The type of power cord shipped with the unit is country-dependent.

When two power supplies are installed, each power supply is capable of load sharing 50% (+/- 5%) of the power in a 7C105-P chassis power load. This not only provides redundancy, it also extends the life of the power supplies. If one power supply fails, the other power supply supports the entire power load of the chassis without interruption to network traffic. Refer to "Installation Site Guidelines" on page 2-2 for power outlet requirements.

Auto-Ranging Power Supplies

The 7C205-1 power supply automatically adjusts to the input voltage and frequency, which allows for an input voltage of 100 to 220 Vac, and a frequency between 50 and 60 Hz. See the operating specifications in Appendix A. No additional adjustments are necessary. For installations in North America, a 20 A power cord is required. See "Connecting AC Power to 7C205-1" on page 3-13 for more details.

Power Supply LANVIEW LEDs

Each power supply comes equipped with LANVIEW® LEDs for at-a-glance diagnostics that indicate individual power supply status and overall chassis redundancy status. Refer to Chapter 2, **Installation Requirements and Guidelines**, for a full explanation of the power supply LEDs and their definitions.

Power Supply Status Through System Management

The Enterasys Matrix N5 chassis power supplies report information to the DFE modules installed in the chassis regarding their present operating status as well as the fan assembly status. This information includes the following:

- Power Supply ID (PS1, PS2)
- Power Supply Status (normal/fault/not installed)
- Power Supply Redundancy indication (redundant/not available)
- Fan Status (normal/fault)

Refer to the module-specific Configuration User's Guide for instructions on how to access power supply status information.

Power Supply Replacement

To reduce network downtime, a 7C205-1 power supply may be removed after it has been powered down. When two power supplies are installed, this allows the removal of one power supply without powering down the chassis and interrupting network traffic.

POE Power Supply System

The POE power supply system is located in the lower front part of the Enterasys Matrix N5 chassis under the bays for the 7C205-1 system power supplies.

The POE power system:

- Supports up to four N-POE PSMs in an N+1 configuration (if two or more N-POE PSMs are installed and one fails, power is provided by the remaining N-POE PSMs).

- Provides power for up to five POE switch modules residing in the Enterasys Matrix N5 chassis.
- Provides separate AC power inlet connectors for each N-POE PSM installed.

N-POE Power Supply Module (N-POE PSM)

The N-POE PSM features include the following:

- Hot swappable capability as long as the total power needed does not exceed the power output capability of the remaining N-POE PSMs in the N5 chassis.
- Provides a maximum power output of 1200 W to PoE switch modules. The maximum number of PDs (Powered Devices) supported by each PoE switch module is dependent on the PD power consumption as indicated by their Power Classifications. For details about Power Classification, refer to "Powered Devices (PDs)" on page 1-6.
- Provides power redundancy when two N-POE PSMs are installed in the N5 chassis and there is no more than a 1200-Watt demand by the connected DFE series switch module to support PDs. So if one N-POE PSM fails or is removed from the chassis, the other N-POE PSM can support the total load.
- Provides continuous power sharing by all N-POE PSMs when two or more are installed in the N5 chassis. Up to four N-POE PSMs can be installed in the chassis to provide up to 3600 Watts of 3 plus 1 for redundant power.

N-POE PSM Status LEDs

There are two status LEDs on each N-POE PSM (AC power LED and DC power LED) that indicate if the AC input and DC output are within specifications.

Powered Devices (PDs)

PDs are devices that receive their operating 48 Vdc power through a new or existing Ethernet cable from a switch or other device that can provide a PoE-compliant port connection. This enables the PD to operate in a location without local power.

For example:

- Devices such as PoE-compliant remote EXIT signs and Personal Data Assistants (PDAs),
- Devices that support Voice over IP such as PoE-compliant digital telephones,
- Devices that support Wireless Application Protocol (WAP) such as security cameras, laptop PCs, and many more devices.

Each device is rated according to a PoE Power Classification assigned by the manufacturer. If you know the classification of the PDs connected to your system, you can approximate the total amount of power needed to operate the PDs and plan accordingly.

Power Classifications and Deployment

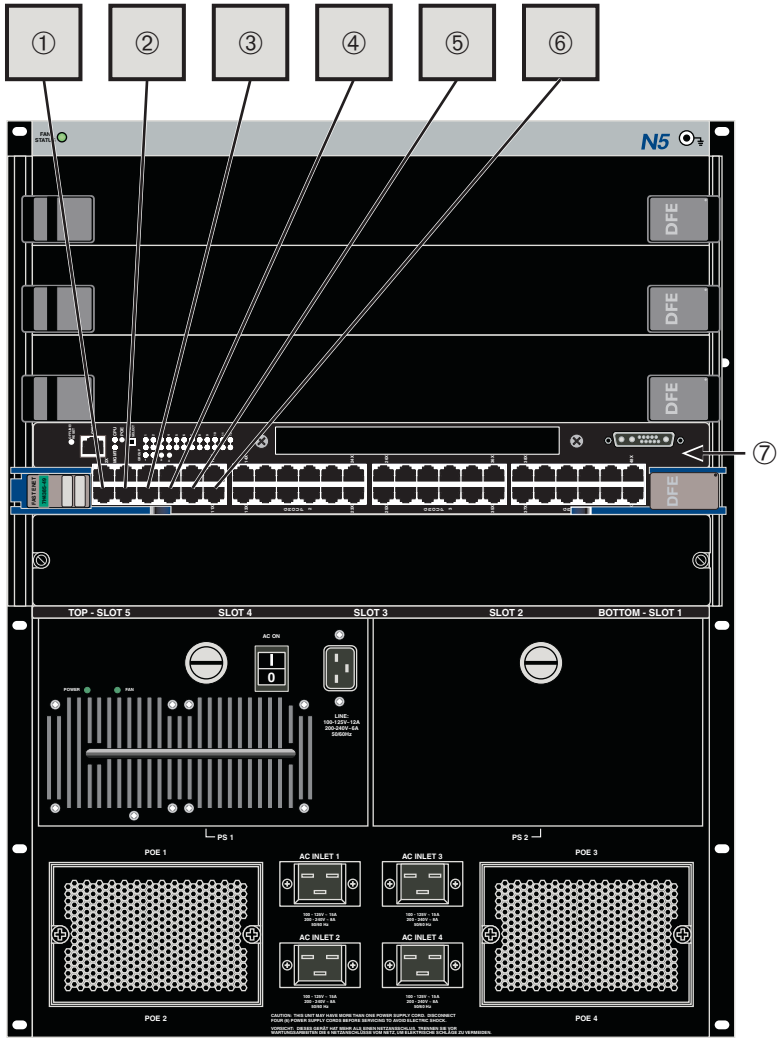
The number of N-POE PSMs needed to power the PoE-compliant PDs is dependent on their Power Classifications. Each N-POE PSM can supply up to 1200 Watts of power. You can determine the number of power supplies needed by referring to Table 1-1 and adding up the maximum power requirement according to the Power Classification rating (1 through 3) of each PD. Keep in mind that each classification represents a range of power, so your maximum calculation represents a worst-case power consumption, but the actual power consumption could be less.

Table 1-1 DTE PoE Power Classifications

Class	Usage	PD Power Range Usage
Class Unknown	Default	0.44 to 12.95 Watts
1	Optional	0.44 to 3.84 Watts
2	Optional	3.84 to 6.49 Watts
3	Optional	6.49 to 12.95 Watts
4	Not Allowed	Reserved for Future Use

Figure 1-2 shows an example of a simple configuration with one DFE series PoE-compliant module (such as the Enterasys Networks 7H4385-49) installed in an N5 chassis and connected to six devices represented by the numbered boxes (1 through 6). In this example, assume box 1 represents a non-PoE compliant device and boxes 2 through 6 represent PoE-compliant PDs. The PoE power system provides 48 Vdc and power supply status information (indicates if power supplies are okay) through the N5 chassis backplane to the PoE switch module.

Figure 1-2 Example of a Simple N-PoE Power Configuration



1 PD, non-PoE compliant
2 PD, no Class rating
3 PD, Class 2
4 PD, Class 2
5 PD, Class 3
6 PD, Class 4
7 PoE-compliant switch module

The PoE switch module manages the 48 Vdc output to the six PDs. In this example, assume that six of the PoE module 48 Vdc/data ports are devices connected to PDs with the following Class ratings:

- One does not support PoE (no power)
- One has no Class rating (Defaults to Class 0, 12.95 Watts maximum)
- Two are Class 2 (6.49 Watts maximum x 2 = 12.98 Watts total)
- One is Class 3 (12.95 Watts maximum)
- One is Class 4 (defaults to 12.95 Watts maximum)

The maximum power needed from the N5 chassis is 51.83 Watts. In this example, only one N-POE PSM would be needed in the Enterasys Matrix N5 chassis. However, as an option a second N-POE PSM can be installed for redundancy. As long as N-POE PSMs are sharing a load of under 1200 Watts, one N-POE PSM can handle the load if the other fails or is removed from the N-POE Chassis.

Getting Help

For additional support related to the chassis or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	www.enterasys.com/support/
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-978-684-1000 For the Enterasys Networks Support toll-free number in your country: www.enterasys.com/services/support/contact/
Internet mail	support@enterasys.com To expedite your message, please type **[N-SERIES]** in the subject line.
To send comments or suggestions concerning this document to the Technical Publications Department: techpubs@enterasys.com To expedite your message, include the document Part Number in the Email message.	

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

2

Installation Requirements and Guidelines

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter provides guidelines that should be followed when installing the 7C105-P chassis.

For information about...	Refer to page...
Site Requirement	2-1
Installation Site Guidelines	2-2
Configuration Guidelines	2-3
LANVIEW LEDs	2-4

Site Requirement

The 7C105-P chassis must be installed in a Restricted Access Location (RAL). This location should only be accessible by people that have been trained or are technically competent enough to be aware of potential risks of accessing the hazardous areas of the chassis. Installation sites such as a locked wiring closet or locked cabinet meet this requirement.

Warning: Install the Enterasys Matrix N5 chassis in a Restricted Access Location only. Access to the equipment by users must be restricted through the use of a tool or lock and key or other means of security and is controlled by the authority responsible for the location.

Advertencia: Instalar el chasis Enterasys Matrix N5 en un lugar de Acceso Restringido. Acceso al equipo debe ser restringido mediante el uso de una herramienta o candado o cualquier otro método de seguridad y debe ser controlado por el responsable del lugar.

Warnhinweis: Installieren Sie das N5 Chassis nur in einer zugangsgeschützten Umgebung. Der Bereich zu den Komponenten sollte durch ein Schloß, einen Schlüssel oder sonstigen Sicherungen geschützt und durch einen Verantwortlichen kontrolliert werden.

Installation Site Guidelines

The following guidelines must be followed when an installation site is considered for the N5 chassis.

- Installed the 7C105-P chassis in a Restricted Access Location (RAL). This location should only be accessible by people that have been trained or are technically competent enough to be aware of potential risks of accessing the hazardous areas of the chassis. Installation sites such as a locked wiring closet or locked cabinet meet this requirement.

  Warning: Install the Enterasys Matrix N5 chassis in a Restricted Access Location only. Access to the equipment by users must be restricted through the use of a tool or lock and key or other means of security and is controlled by the authority responsible for the location.

  Advertencia: Instalar el chasis Enterasys Matrix N5 en un lugar de Acceso Restringido. Acceso al equipo debe ser restringido mediante el uso de una herramienta o candado o cualquier otro método de seguridad y debe ser controlado por el responsable del lugar.

  Warnhinweis: Installieren Sie das N5 Chassis nur in einer zugangsgeschützten Umgebung. Der Bereich zu den Komponenten sollte durch ein Schloß, einen Schlüssel oder sonstigen Sicherungen geschützt und durch einen Verantwortlichen kontrolliert werden.

- Ensure that the chassis has 7.62 centimeters (3 inches) of clearance above the unit and 5.08 centimeters (2 inches) of clearance on either side of the unit for proper cooling within the rack.
- Ensure that the chassis is installed in an equipment rack or cabinet, which will support the chassis without jeopardizing its stability.
- Ensure there are six AC power outlets available within 182 centimeters (6 feet) from the chassis to provide power for the 7C205-1 AC power supplies and the

N-POE-1200W DC power supplies. Each AC outlet must have a reliable ground connection and be on an independently-fused circuit, which can supply the current and voltage specified in "Matrix N5 Chassis" on page A-2 and "7C205-1 System Power Supply Module" on page A-3. The outlets needed as per each model power supply are:

- Two grounded AC power outlets, one for each of the two 7C205-1 AC power supplies installed in the 7C105-P chassis.
- Four grounded AC power outlets, one for each of the four optional N-POE-1200W DC power supplies installed in the chassis. These power supplies receive their AC power from the chassis through the AC INLET 1 through 4 chassis connectors.

The power cords used and type of outlets is dependent on the country. In the United States, one power cord with NEMA 5-20P plugs is provided with each 7C205-1 and N-POE PSM.

- Ambient temperature at the installation site must be maintained between 5° and 40°C (41° to 104°F). Temperature changes must be maintained within 10°C (18°F) per hour.

Configuration Guidelines

The N5 chassis has five slots that can accept both standard and PoE-compliant DFE modules. The slots are numbered 1 to 5 beginning with the bottom-most slot. There are two power systems in the bottom half of the 7C105-P chassis, one for system operation and one to provide power to PoE-compliant DFE modules installed in the chassis.

The two bays labeled PS1 and PS2 are for the 7C205-1 system power supplies. One 7C205-1 is shipped with the chassis. As an option, a second one can be installed to provide power redundancy for the chassis and installed DFE modules.

The two covered bays at the bottom front of the chassis are for the PoE power system. This PoE power system is independent from the chassis power system.

The PoE power system can consist of up to four optional N-POE-1200W power supply modules to provide power requirements for PoE-compliant DFE modules installed in the chassis and the power required to support Powered Devices connected to those DFE modules.

The DFE modules for the 7C105-P chassis are equipped with a firmware-based management tool, which provides the capability to configure one or more DFE modules; and enables access to the chassis, power supply, and fan assembly status information.

LANVIEW LEDs

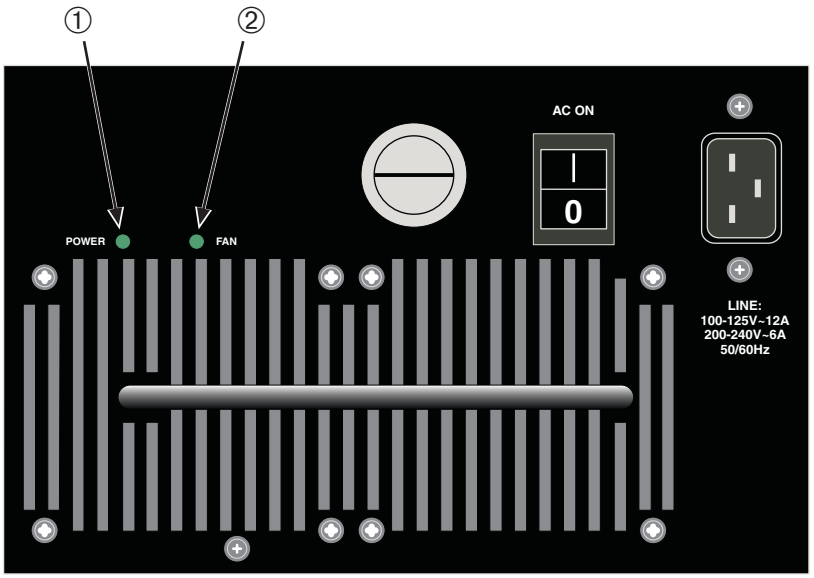
The following sections describe the LANVIEW LED indications for the following:

- 7C205-1 power supply module
- N-POE-1200W power supply module
- Fan assembly

Power Supply (7C205-1) LEDs

There are two LEDs on the 7C205-1 power supply. Refer to Figure 2-1 for the location of the power supply LEDs. Table 2-1 describes the different states of the power supply LEDs under six different conditions. The power supplies are installed in chassis slots PS1 and PS2 of the chassis.

Figure 2-1 7C205-1 Power Supply LEDs



1 POWER LED **2** FAN LED

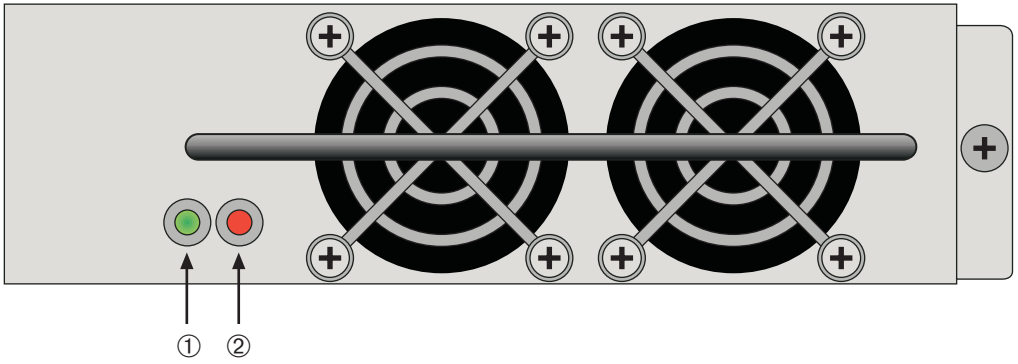
Table 2-1 Power Supply (PS) LED Status Definitions

Condition	PS1	PS2	Load	PS1 LEDs		PS2 LEDs	
				POWER	FAN	POWER	FAN
1	ON	OFF		Amber	Green	Red	Red
2	OFF	ON		Red	Red	Amber	Green
3	ON	Out of chassis		Green	Green	Off	Off
4	Out of chassis	ON		Off	Off	Green	Green
5	ON	ON	<50%	Green	Green	Green	Green
6	ON	ON	>50%	Amber	Green	Amber	Green

PoE Power Supply (N-POE-1200W) LEDs

There are two LEDs on the N-POE-1200W power supply module. Refer to Figure 2-2 for the location of the power supply LEDs. Table 2-2 describes the different states of the power supply LEDs. The power supplies are installed in chassis slots POE 1 through POE 4.

Figure 2-2 N-POE-1200W Status LEDs



1 DC power status LED **2** AC power status LED

Table 2-2 N-POE-1200W Power Status LED States and Their Definitions

LED	Color	Status
DC power	Green	**OFF** - DC power output is out of specifications **ON** - DC power output normal
AC power	Red	**OFF** - AC power input normal **ON** - AC power input is out of specifications

Fan Status LED

Refer to Figure 2-3 for the location of the Fan Status LED. Table 2-3 describes the different states of the LED.

Figure 2-3 Fan Status LED

1 Fan Status LED

Table 2-3 Fan Status LED States and Their Definitions

LED Color	Status
Green	All fans are operating normally.
Red	One or more fan failures have occurred. When the Enterasys Matrix N5 is first powered up, the Fan Status LED will display red briefly, until the fans are operating at the proper speed.

Caution: If the LED remains red, replace the fan assembly immediately. Otherwise, the system will overheat and cause damage to the components in the chassis.

Precaución: Si observa que la lucecita roja no se apaga, cambie inmediatamente el sistema de ventilación. Si no lo hace, el sistema se sobrecalentará y los componentes del chasis se dañarán.

3

Chassis Installation

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter describes how to install the Enterasys Matrix N5 chassis into a standard 19-inch rack and install its modular power components.

For information about...	Refer to page...
Required Tools	3-2
Unpacking the Chassis	3-2
Unpacking the Power Supply Modules	3-5
Installing the Chassis	3-6
Installing a 7C205-1 Power Supply	3-8
Installing Optional N-POE PSMs	3-10
Connecting AC Power to 7C205-1	3-13
Connecting AC Power to N-POE PSMs	3-14
Troubleshooting the N-POE PSM	3-15
Replacement Procedures	3-17

Installation Site Requirement

The Matrix N5 7C105-P chassis must be installed in a Restricted Access Location (RAL). This location should only be accessible by people that have been trained or are technically competent enough to be aware of potential risks of accessing the hazardous areas of the chassis. Locations such as a locked wiring closet or locked cabinet meet this requirement.

Warning: Install the Enterasys Matrix N5 chassis in a Restricted Access Location only. Access to the equipment by users must be restricted through the use of a tool or lock and key or other means of security and is controlled by the authority responsible for the location.

Advertencia: Instalar el chasis Enterasys Matrix N5 en un lugar de Acceso Restringido. Acceso al equipo debe ser restringido mediante el uso de una herramienta o candado o cualquier otro método de seguridad y debe ser controlado por el responsable del lugar.

Warnhinweis: Installieren Sie das N5 Chassis nur in einer zugangsgeschützten Umgebung. Der Bereich zu den Komponenten sollte durch ein Schloß, einen Schlüssel oder sonstigen Sicherungen geschützt und durch einen Verantwortlichen kontrolliert werden.

Required Tools

- Phillips screwdriver to install the unit into a rack, install N-POE-1200W power supplies, cables, and replace the fan assembly, if necessary.
- Large flat blade screwdriver to install the 7C105-P power supply.

Refer to Chapter 2 for the guidelines that must be followed to install the Enterasys Matrix N5.

Unpacking the Chassis

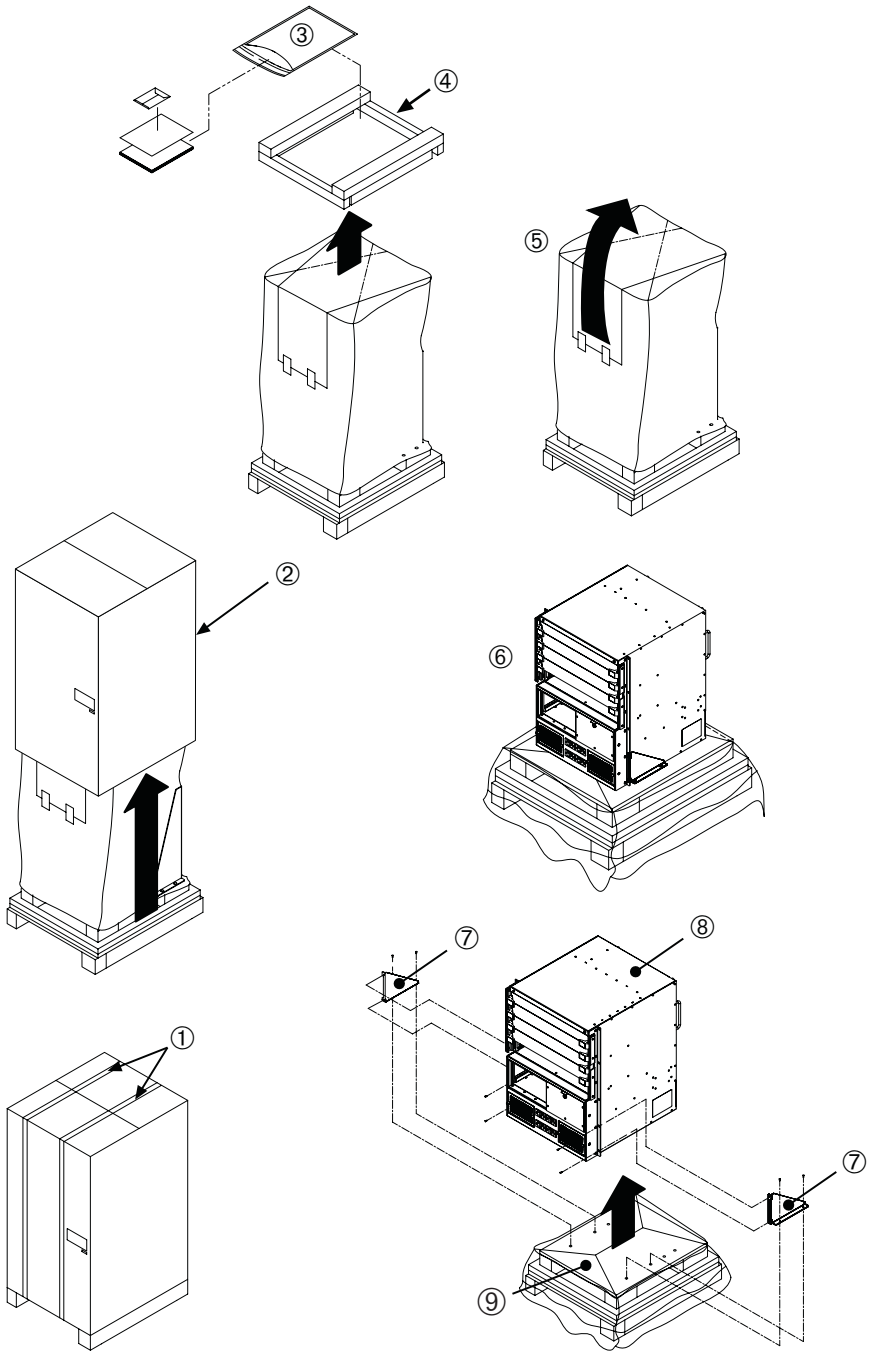
Note: To facilitate installation, move the packed system to the intended installation site before unpacking it.

Unpack the Enterasys Matrix N5 chassis components only as needed. Leave the components in their respective shipping cartons until you are ready to install that component. Save all shipping materials in the event that the chassis has to be repacked.

The 7C105-P chassis is packed and shipped on a skid. Move the skid to the selected installation site before unpacking the chassis. Examine the outside packaging for obvious damage. To unpack the 7C105-P chassis, refer to Figure 3-1, which includes numbers that correspond to the steps below, and proceed as follows:

1. Cut the two shipping straps fastening the corrugated box to the skid.
2. Lift and remove the box off the skid.

Figure 3-1 Unpacking the Enterasys Matrix N5 Chassis



3. Remove and save the accessory package and any other documents, and cable from the top of the styrofoam cap. The accessory package contains:
   - Electrostatic Discharge (ESD) wrist strap
   - Installation documentation
4. Lift and remove the styrofoam cap from the top of the chassis. Save for reshipping, if necessary.
5. Open the top of the shipping bag covering the unit.
6. Pull the bag down around the skid.
7. Remove and save the eight screws fastening left and right shipping brackets to the chassis and the skid.
8. Lift and remove the chassis from the skid.
9. Save the plastic bag and skid for future reshipping, if necessary.

Note: To reship the chassis, refer to Figure 3-1 and perform each step in reverse and in the reverse order. Ensure that all shipping brackets are used to package the chassis.

After unpacking the chassis, verify the contents of the shipment with those listed in Table 3-1, and perform a visual inspection of the devices for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to "Getting Help" on page 1-10 for details.

Table 3-1 Contents of Enterasys Matrix N5 Chassis Carton

Item	Quantity
Enterasys Matrix N5 Chassis	1
Manual Accessory Kit	1
Electrostatic Discharge Wrist Strap	1
Release Notes	1

Unpacking the Power Supply Modules

The 7C205-1 and optional N-POE-1200W power supply modules are shipped in boxes separate from the chassis. To unpack a power supply, proceed as follows:

1. Unpack the power supply by removing it from the shipping box and sliding the two foam end caps off the unit. (Save the shipping box and materials in the event the unit must be reshipped.)
2. Verify the contents of the box using Table 3-2 and Table 3-3, as appropriate.
3. Remove the power supply from its protective plastic bag.
4. Examine the power supply carefully, checking for damage. If any damage is noted, DO NOT install the power supply. Contact Enterasys Networks immediately. Refer to "Getting Help" on page 1-10 for details.

Table 3-2 Contents of 7C205-1 Power Supply Carton

Item	Quantity
7C205-1 AC Power Supply	1
Type of power cord is dependent on country of installation.[1] For USA shipments: NEMA Power Cord 6-20, C19, R/A, SHLD	1
NOTICE Card	1

1. If a power cord needs to be replaced, it must meet the requirements specified in "AC Power Cord" on page A-5.

Table 3-3 Contents of Optional N-POE PSM Power Supply Carton

Item	Quantity
N-POE-1200W DC Power Supply Module	1
Type of power cord is dependent on country of installation.[1] For USA shipments: NEMA Power Cord 6-20, C19, R/A, SHLD	1
NOTICE Card	1

1. If a power cord needs to be replaced, it must meet the requirements specified in "AC Power Cord" on page A-5.

Installing the Chassis

The Matrix N5 7C105-P chassis can be installed in a standard 48.26-centimeter (19-inch) equipment rack. Up to three N5 chassis chassis can be mounted in a standard 7-foot high cabinet.

Note: Allow at least 60 centimeters (24 inches) or more clearance in front and rear of the rack for chassis installation and maintenance.

Caution: Read **Chapter 2** before completing the following procedure to ensure that all installation guidelines are met.

Precaución: Antes de llevar a cabo el siguiente procedimiento, lea **Chapter 2** para y asegúrese de cumplir con todos los requisitos de instalación.

Rack Mounting the Chassis

To install the Matrix N5 7C105-P chassis in a rack, refer to Figure 3-2 and proceed as follows:

Note: In order to prevent a possible interference between the rack frame front and chassis rack ears, the tapped rails may need to be adjusted such that they are recessed approximately 2 inches behind the rack frame front. If the rack has a front door, this distance may need to be slightly more depending on the door thickness.

Warning: To help prevent personal injury, at least two people are required to lift the chassis into the rack.

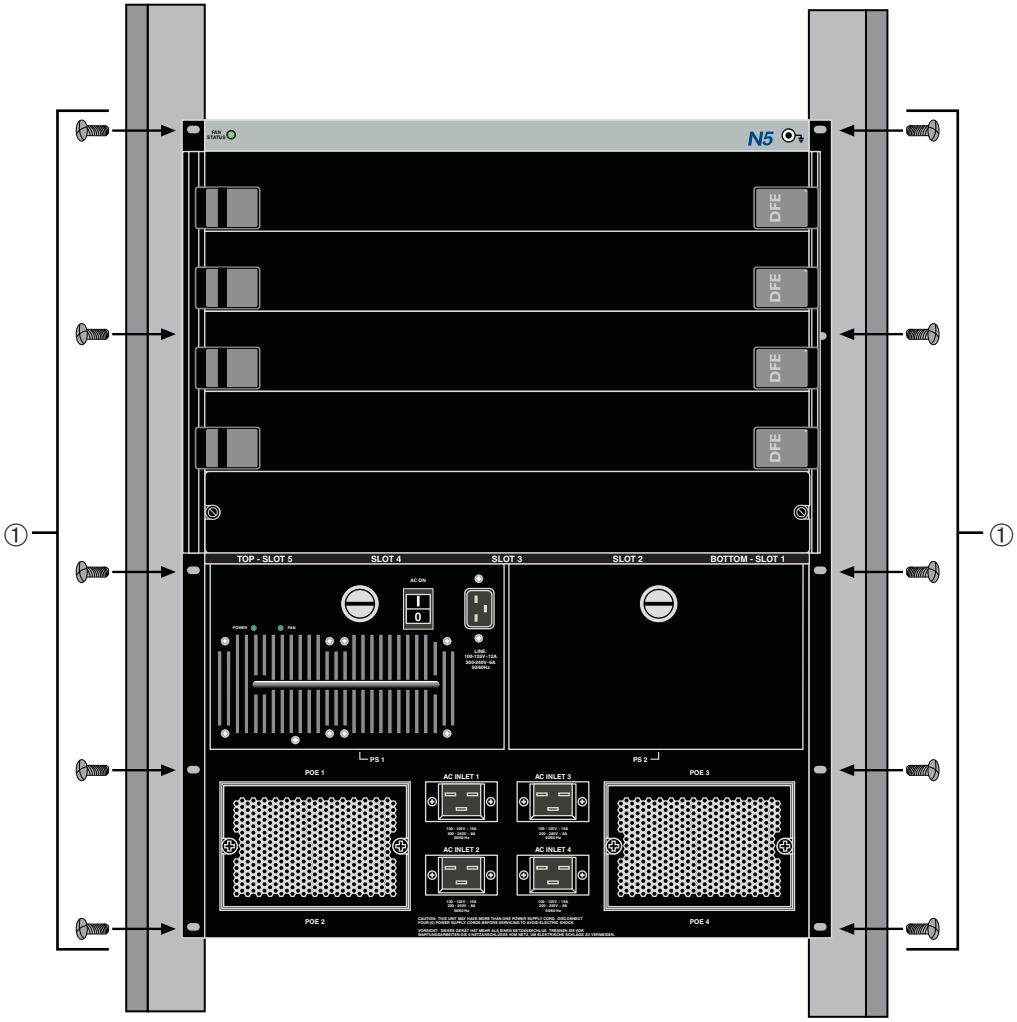
Advertencia: Para ayudar a prevenir alguna lesión personal, al menos dos personas son requeridas para levantar el chasis y meterlo al rack.

Warnhinweis: Zum Schutz vor körperlichen Schäden, sollten sie mit min. zwei Personen das Chassis in das Rack heben.

1. Lift the chassis and align the chassis mounting holes with those in the rack.
2. Use 10 screws (5 per side) provided with the equipment rack to secure the chassis to the rack, starting with the bottom holes and working toward the top of the chassis.

Note: Refer to Table A-6 on page A-5 for recommended torque values to use when installing the N5 chassis using standard threaded fastener machine screws and bolts.

Figure 3-2 Rack Mounting the Enterasys Matrix N5 chassis



1 Rack-mounting screws (5 per side)

Attaching the Electrostatic Discharge Wrist Strap

The Electrostatic Discharge (ESD) wrist strap must be attached before handling the power supplies, fan assembly, and modules used in the N5 chassis. In addition, observe all precautions when handling these modules to prevent damage from electrostatic discharge.

Place the ESD wrist strap on your wrist and plug the other end into the grounding receptacle, at the top right corner of the chassis, shown in Figure 3-3 on page 3-8.

Figure 3-3 ESD Grounding Receptacle

1 ESD grounding receptacle

Installing a 7C205-1 Power Supply

You must install at least one 7C205-1 in the N5 chassis for chassis power. One power supply provides sufficient power for a fully loaded chassis, but a second power supply can be installed to provide a redundant, load sharing power source. When you receive your N5 chassis, a coverplate will be in place over power supply slot PS2.

When two power supplies are installed, the load is evenly distributed. If one power supply fails for any reason, the second power supply assumes the load.

The power supplies must be installed in the two slots labeled PS1 and PS2 at the bottom of the chassis (Figure 3-4). If you intend to install a single power supply, it must be installed in the slot labeled PS1 in the chassis. A large flat blade screwdriver is needed to install the power supplies.

To install the power supply, refer to Figure 3-4 and proceed as follows:

1. Slide the power supply into the slot labeled PS1, as follows:
   a. Hold the power supply by placing one hand on the handle located on the front panel and using the other hand to support the power supply.
   b. Holding the power supply right side up, align the power supply with the bottom of the opening PS1.

Caution: Forcing a misaligned power supply into place can damage the power supply and/or the chassis backplane.

Precaución: Colocar de manera forzada una fuente de poder o no colocarla bien alineada podría dañarla y/o maltratar el panel posterior del chasis.

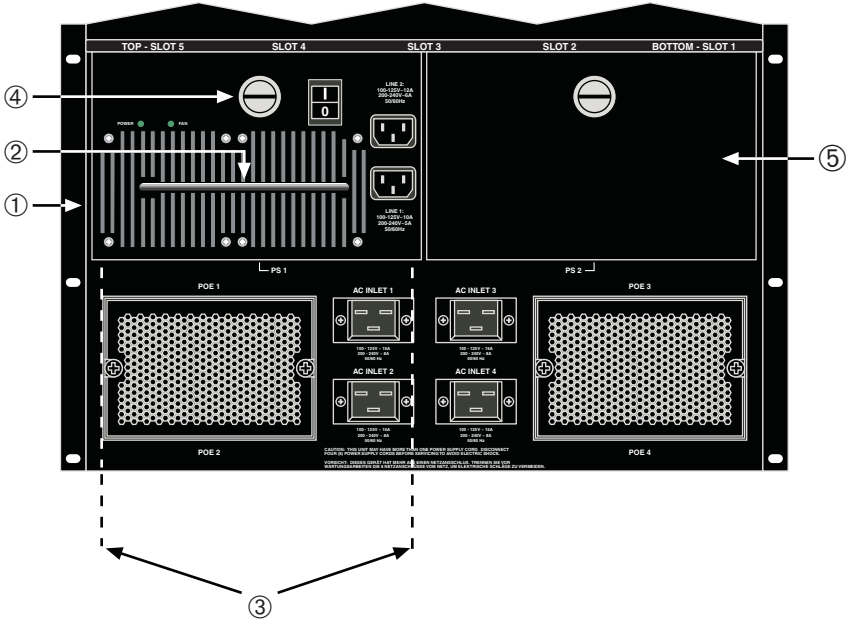
c. With the power supply properly inserted into the opening, carefully slide the supply forward until it is connected to the backplane. The front panel should be flush with the face of the N5 chassis. If significant resistance is encountered before the front panel is flush, remove and reinsert the power supply. Do not force the power supply into place.

d. Secure the power supply to the chassis by using a large flat blade screwdriver to turn the large screw and lock the power supply in place.

2. If you are installing a second power supply, locate the large screw on the blank plate covering slot PS2 and turn the screw counterclockwise to release and remove the blank plate (keep the blank plate in case you need to remove a 7C205-1 and operate the chassis with only one power supply), and repeat steps 1.

Note: If you need to remove a 7C205-1, refer to "Replacement Procedures" on page 3-17 for instructions.

Figure 3-4 Installing 7C205-1 Power Supply Module



1 Mandatory power supply installed in slot PS1
2 Power supply handle
3 Sides of PS1 slot
4 Slotted screw
5 Blank plate covering slot PS2

Note: To install the DFE modules, refer to the module installation guide for the installation instructions. Before you power up the N5 chassis, it is recommended that you complete the installation of any optional N-POE-PSM-1200W power supplies, as applicable, and DFE modules.

If you plan to install optional N-POE-1200W DC power supply modules, proceed to Installing Optional N-POE PSMs (page 3-10) for instructions. Otherwise, install the DFE Ethernet modules as described in the installation guide shipped with your DFE Series module, then proceed to "Connecting AC Power to 7C205-1" on page 3-13 for instructions to power up the chassis.

Installing Optional N-POE PSMs

Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

When you receive your N5 chassis, chassis bay covers are in place over both PoE power-supply bays. The bay covers have three purposes. They provide an intake air ventilation path, reduce Electromagnetic Interference, and provide access to the two slots in each chassis bay. The left bay has power-supply slots 1 and 2; the right bay, slots 3 and 4.

As shown in Table 3-4, you can have power redundancy with two to four N-POE PSMs installed as long as the total load does not exceed power demand as stated in the Redundancy column. When two or more N-POE PSMs are installed, the load is evenly shared by all the N-POE PSMs. If one power supply fails or is removed for any reason, the other power supplies take up the load.

Table 3-4 Power Distribution According to Number of Installed Power Supplies

Power Supplies	Redundancy	Hot Swappable	Power Sharing
1	None	No	Maximum power 1200 Watts
2	Yes, if power demand is less than 1200 Watts.[1]	Yes	The total load is shared by both power supplies.
3	Yes, if power demand is less than 2400 Watts.[1]	Yes	The total load is shared by the three power supplies.
4	Yes, if power demand is less than 3600 Watts.[1]	Yes	The total load is shared by the four power supplies.

1. If power requirements exceed this wattage, power redundancy is no longer supported. Removing a power supply under this condition will cause the remaining power supplies to go into overcurrent protection and shut down the power system.

To install the N-POE PSMs, proceed as follows:

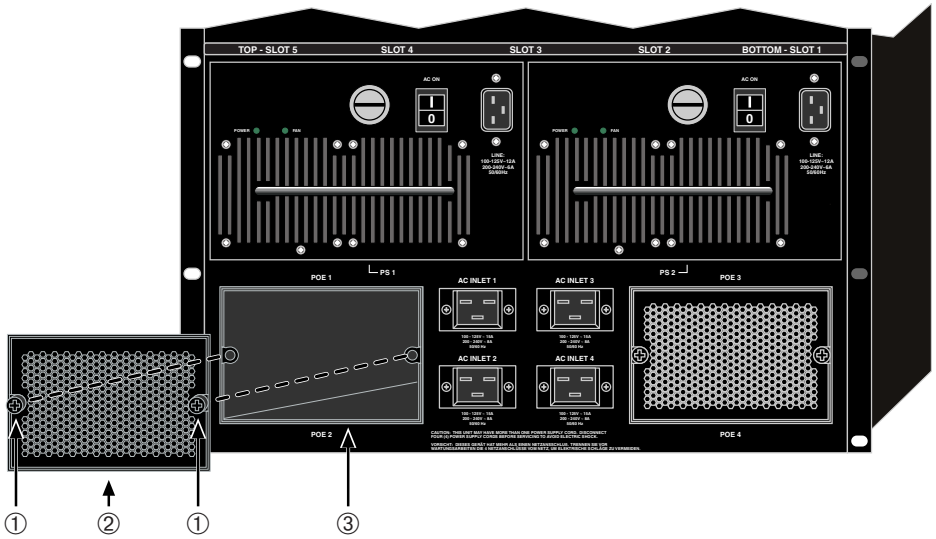
Note: To reduce Electromagnetic Interference from the Enterasys Matrix N5 Chassis, ensure that both bay covers are installed during operation.

1. Refer to Figure 3-5. Unscrew the two Phillips-head captive-cover screws to release the bay cover from the chassis bay where you plan to install an N-POE PSM. (In this procedure, the left bay is used as an example.) Remove the bay cover and set it aside for now.

Caution: In the following step, do not force the power supply into place. You could damage the power supply and/or the chassis connector.

Precaución: En el siguiente paso, tenga cuidado de no colocar a fuerza la fuente de poder en su sitio. Si lo hace, podría dañar tanto la fuente como el conector del chasis.

Figure 3-5 Removing a Chassis Bay Cover



1 Captive screw, Phillips head (2) **2** Bay cover **3** Chassis bay (left)

2. Refer to Figure 3-6. Align the N-POE PSM with POE 1 slot inside bay 1, then slide the N-POE PSM forward until the N-POE PSM is plugged into the chassis connector and completely inside the bay. If significant resistance is encountered before the N-POE PSM reaches the end of its travel, remove and reinsert the power supply.
3. Fasten the N-POE PSM to the N5 chassis using the captive Phillips-head screw on the N-POE PSM front panel.
4. Repeat steps 2 through 3 for each additional N-POE PSM.

5. Replace the bay cover removed in step 1.

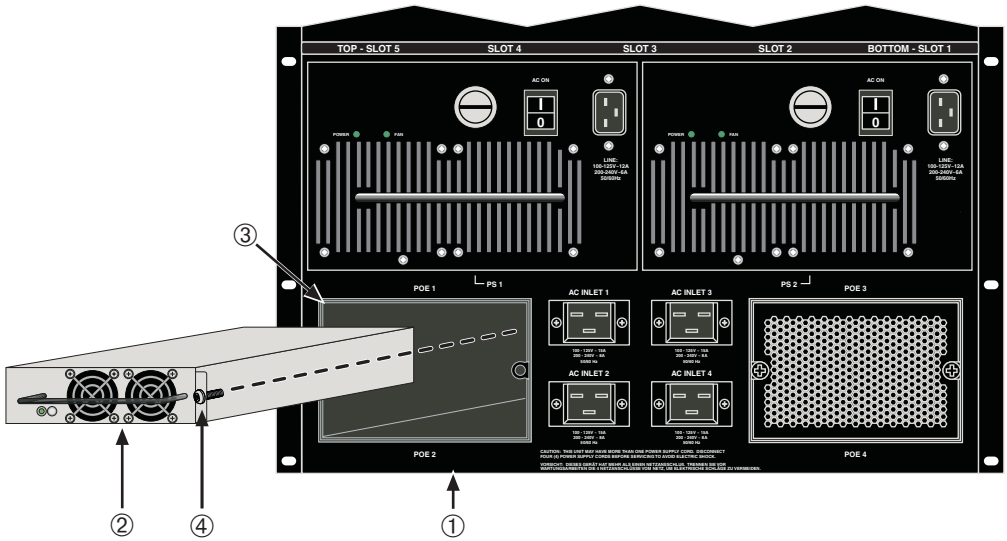
Caution: It is important to replace any bay cover removed during the installation to reduce Electromagnetic Interference from the chassis.

Precaución: Para reducir la interferencia electromagnética del chasis, no olvide volver a colocar todas las tapas de los compartimentos que haya quitado durante el proceso de instalación.

Note: If you need to remove a N-POE PSM, refer to "Replacement Procedures" on page 3-17 for instructions.

6. Proceed to "Connecting AC Power to 7C205-1" on page 3-13.

Figure 3-6 Installing the N-POE PSM



1 Enterasys Matrix N5 chassis
2 N-POE PSM
3 Power supply slot POE 1
4 Captive screw, Phillips head

Connecting AC Power to 7C205-1

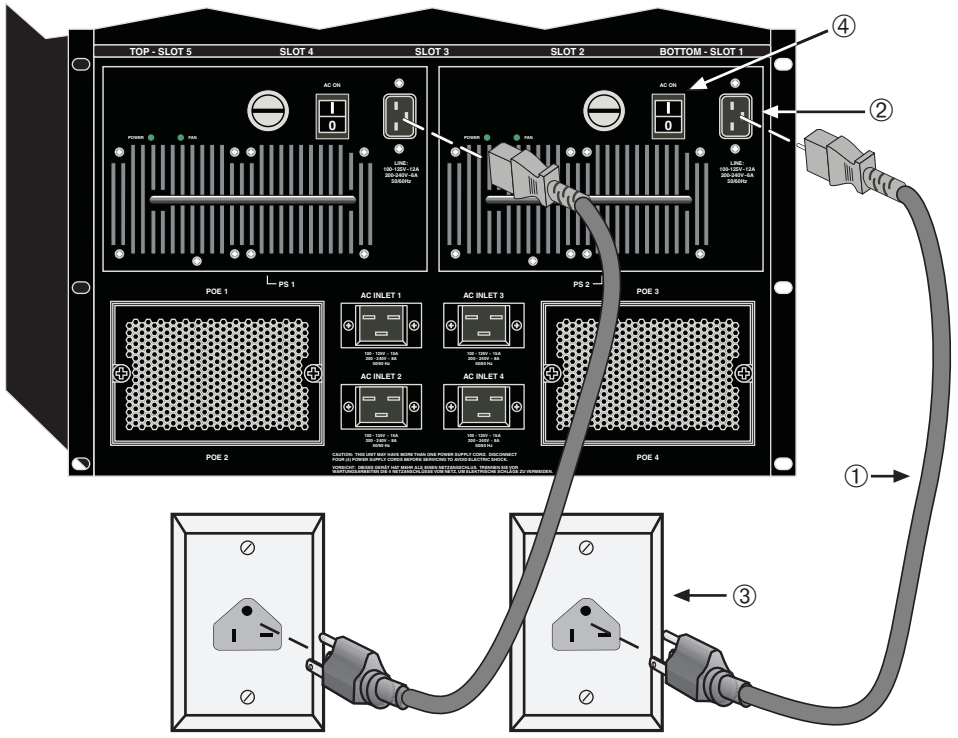
To power up a 7C205-1, refer to Figure 3-7 and proceed as follows:

Note: If two power supplies are installed, repeat the following procedure for each supply.

For proper redundancy using two 7C205-1 power supplies, the power cord from each power supply must be connected to a dedicated 20-Ampere AC power circuit.

1. Plug one end of the power cord (supplied with the power supply) into the AC power socket on the front panel of the power supply.

Figure 3-7 Connecting the 20-Amp AC Power Cord to the 7C205-1



1 AC power cord
2 AC INLET (1 power connector)
3 AC power source
4 AC power switch

2. Plug the other end of the 20 A power cord into a dedicated 20 A/120 Vac receptacle. Press the front panel AC power switch to I (ON).
3. Ensure that the Power LED is green.

4. Ensure that all fans in the fan assembly are operating properly. The fan status LED located at the top-left front of the chassis will turn green when power is received from the power supply modules. For more information on the power supply LEDs (Power and Fan), refer to "LANVIEW LEDs" on page 2-4.
5. If N-POE PSMs have been installed, proceed to "Connecting AC Power to N-POE PSMs".

If you need additional help with this installation, contact Enterasys Networks for assistance.

Connecting AC Power to N-POE PSMs

AC INLET 1 through AC INLET 4 at the front of the N5 chassis provide power to the N-POE PSMs in slots POE 1 through POE 4, respectively. An AC power cord is shipped with each N-POE PSM.

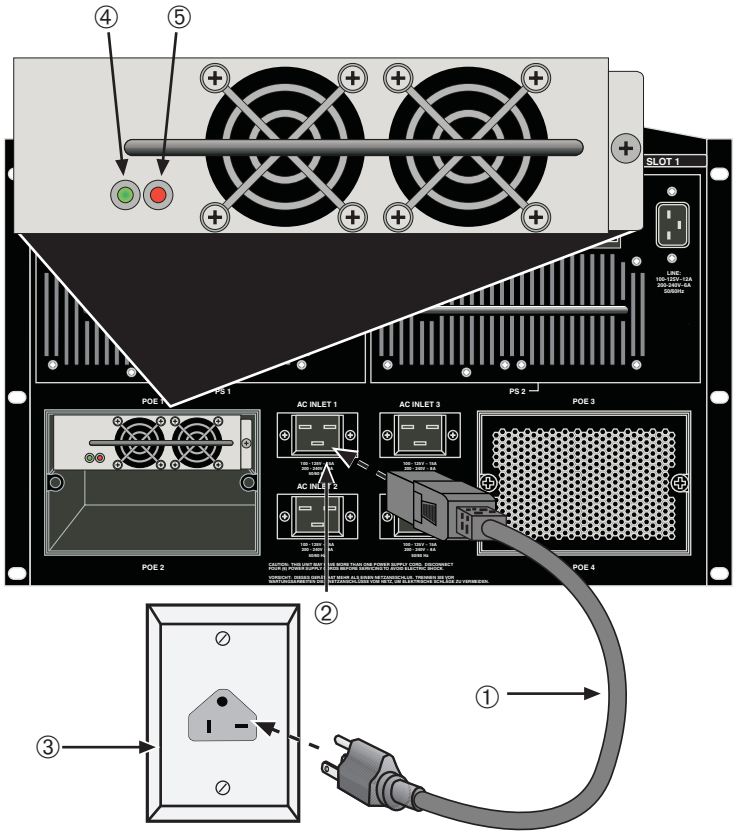
To connect the AC power cord, refer to Figure 3-8 and proceed as follows:

Note: In Figure 3-8 the bay cover is showing the bay cover removed for clarity. It is not necessary to remove the bay cover to observe the LED indications, because they can be seen through the grill in the bay cover.

1. Plug the AC power cord into the appropriate AC INLET connector. In this example, an N-POE PSM is installed in slot POE 1. Therefore, the AC INLET 1 connector is used.
2. Plug the other end of the AC power cord into a separately fused AC power outlet that meets the power specifications provided in Appendix A.
3. Check to see if the DC power LED is green and the AC power LED is off. Otherwise, refer to "Troubleshooting the N-POE PSM" on page 3-15 to determine the problem.
4. If two or more power supplies have been installed, repeat steps 1 through 3 for each N-POE PSM.

If you need additional help with this installation, contact Enterasys Networks. Refer to "Getting Help" on page 1-10 for instructions.

Figure 3-8 AC Power Connections



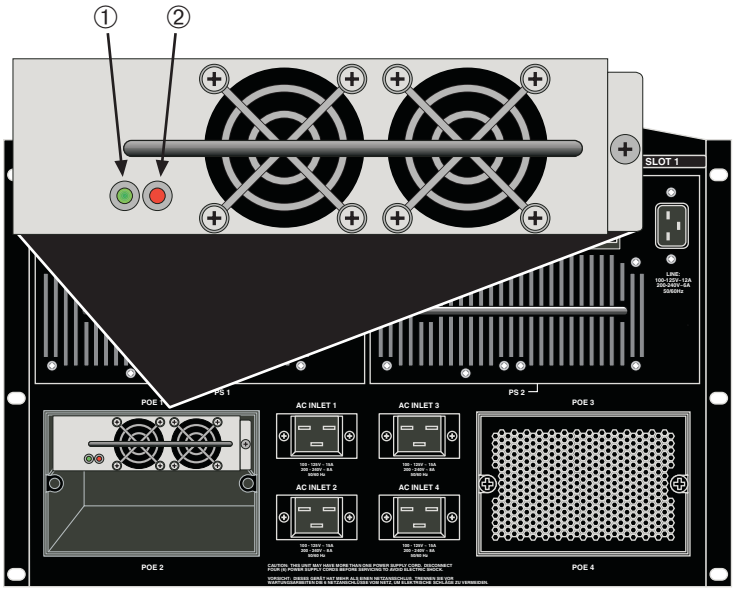
1 AC power cord
2 AC INLET 1 power connector
3 AC power source
4 DC power LED
5 AC power LED

Troubleshooting the N-POE PSM

Figure 3-9 shows the location of the status LEDs, and the circuit breakers. Refer to Table 3-5 for a functional description of each LED and recommended actions to solve a problem.

Note: In Figure 3-9, the bay cover is removed for clarity.

Figure 3-9 N-POE PSM Status LEDs



1 DC power good LED (green) **2** AC power failure LED (red)

Table 3-5 N-POE PSM Status LED Indications and Recommended Actions

LED	Color	State	Recommended Action
AC power LED	Red	**Off** - AC input to power supply is within specification.	None
		Solid - AC input power to power supply is out of specification.	1. Check AC power cord connection to the power supply. 2. Check AC power at the power outlet. 3. Swap power cord for a known good one. 4. Remove or replace affected N-POE PSM. 5. Contact Enterasys Networks for support.
DC power LED	Green	**Solid** - 48 Vdc power supply output is within specification.	1. None
		Off - 48 Vdc power supply output is out of specification.	2. Remove N-POE PSM from chassis. 3. Contact Enterasys Networks for support.

Replacement Procedures

The following instructions describe how to:

- remove a 7C205-1,
- remove N-POE-1200W, or
- remove and install the fan assembly.

Removing a 7C205-1 Power Supply

To remove a 7C205-1 power supply, refer to Figure 3-10 on page 3-18 and proceed as follows:

1. Attach the anti-static wrist strap as described in "Attaching the Electrostatic Discharge Wrist Strap" on page 3-7 before handling the power supply module.

Caution: Always set the 0/| power switch to 0 before removing a power supply from the chassis.

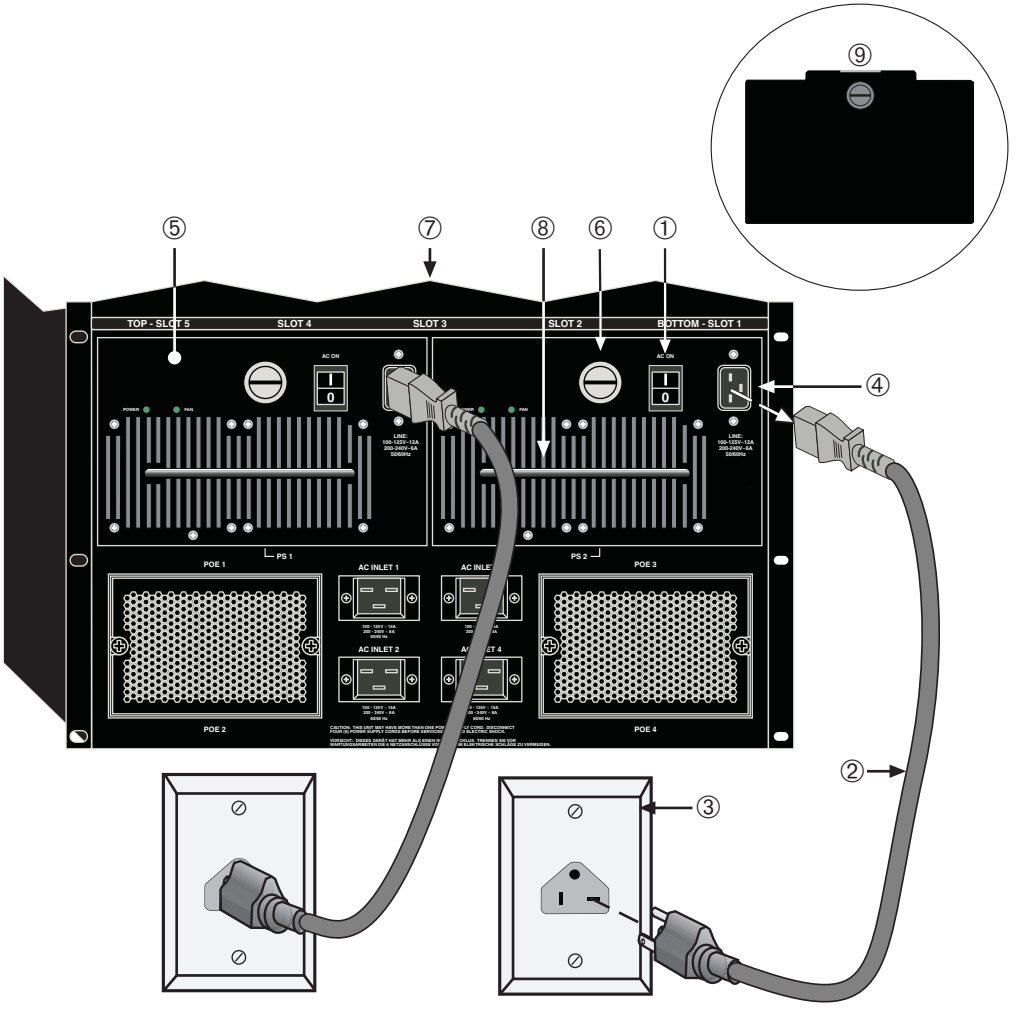
Precaución: Antes de quitar la fuente de poder del chasis, coloque el interruptor 0/| en la posición 0.

2. Set the 7C205-1 power supply **0/|** power switch to **0**.
3. Unplug the power cord from a dedicated 20A/120 Vac outlet.
4. Unplug the power cord from the 7C205-1 AC power socket.
5. Unscrew the captive slotted-head screw to release the power supply from the chassis .
6. To remove the 7C205-1 from the chassis, grasp its front-panel handle and pull the power supply straight out of the chassis and place it on an antistatic surface or in an antistatic bag, for future use.

Caution: If you plan to operate the chassis with only one power supply, make sure to install the coverplate in place of the removed power supply to reduce Electromagnetic Interference.

Precaución: Si desea trabajar sólo con una fuente de poder, no olvide colocar la tapa en el compartimiento de la fuente de poder que haya eliminado, para reducir la interferencia electromagnética.

Figure 3-10 Removing a 7C205-1 from a Powered Up Chassis



1 Power switch	**4** AC power connectors	**7** N5 chassis
2 AC power cords	**5** Power supply	**8** Power supply handle
3 15A/120 Vac power outlets	**6** Captive slotted-head screw	**9** Example of blank plate

Removing an N-POE PSM

To replace an N-POE PSM in an operating N5 chassis, proceed as follows:

Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

1. Unplug the AC power cord going from the AC power oulet to the N5 chassis AC INLET connector associated with the N-POE PSM being removed. For example, if removing the N-POE PSM from power supply slot POE 1, unplug the AC INLET 1 power cord from the AC outlet.
2. Loosen the two captive screws fastening the cover over the bay opening to expose the N-POE PSM to be removed.
3. At the bay opening where the POE slot is located, loosen the captive Phillips-head screw securing the N-POE PSM until it is released from the Enterasys Matrix N5 Chassis.
4. Pull out on the N-POE PSM front-panel handle to remove the N-POE PSM from the Enterasys Matrix N5 Chassis.
5. Repeat steps 1 through 4 for each additional N-POE PSM you plan to remove.

Note: If you plan to remove and not replace an N-POE PSM immediately, reinstall the bay cover over the empty power supply slots to reduce Electromagnetic Interference from the Enterasys Matrix N5 Chassis.

To install an N-POE PSM, refer to steps 1 through 3 in “Installing Optional N-POE PSMs” on page 3-10. Perform those steps for each N-POE PSM being replaced.

Removing and Installing the Fan Assembly

The N5 chassis is equipped at the factory with a removable fan assembly for easy periodic cleaning and/or replacement if a problem occurs with fan operation. A flat Phillips-head screwdriver is needed to remove and reinstall the fan assembly. To remove and reinstall the fan assembly, refer to “Removing the Fan Assembly” on page 3-20 and “Installing the Fan Assembly” on page 3-21.

Caution: The fan assembly is hot-swappable. However, do not run the chassis for any extended periods of time without an operating fan assembly, as the chassis will quickly overheat and cause damage.

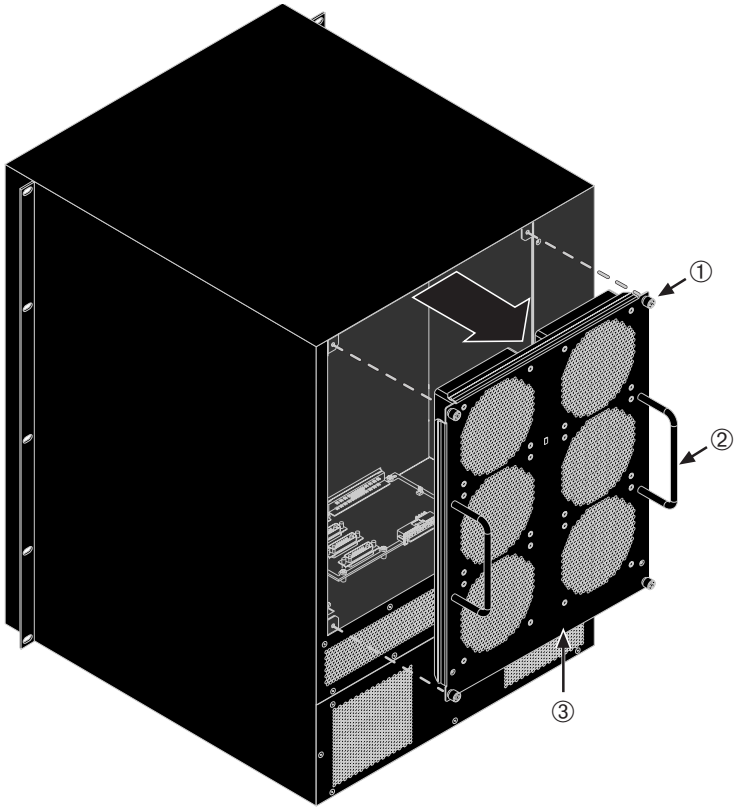
Precaución: El sistema de ventilación se puede reemplazar cuando la unidad está encendida. Sin embargo, no utilice el chasis durante largos períodos sin contar con un sistema de ventilación porque podría sobrecalentarse y dañarse.

Removing the Fan Assembly

To remove the fan assembly, refer to Figure 3-11 and proceed as follows:

1. Locate the ESD wrist strap shipped with the N5 chassis. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper front-right corner of the chassis.
2. Use a Phillips screwdriver to loosen the four captive Phillips-head screws located at each corner of the fan assembly.
3. Slowly pull the fan assembly away from the rear of the chassis.

Figure 3-11 Removing the Fan Assembly



1 Captive Phillips-head screws (4) **2** Fan assembly handles (2) **3** Fan Assembly

Installing the Fan Assembly

To reinstall the fan assembly, refer to Figure 3-12 and proceed as follows:

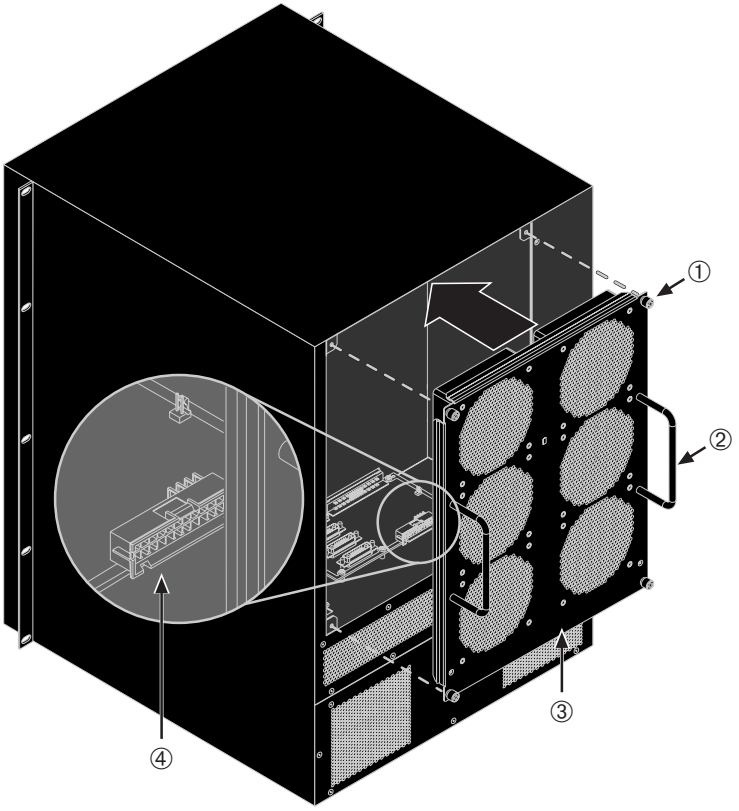
1. Locate the ESD wrist strap shipped with the N5 chassis. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper right corner of the chassis.
2. Hold the fan assembly by its two handles.
3. Line up the fan assembly with the four tapped screw holes in the chassis.

Caution: In the following step, ensure that you do not force the fan assembly into place as it may damage the self-aligning power/control connector in the chassis.

Precaución: En el siguiente paso, tenga cuidado de no colocar de manera forzada el sistema de ventilación, porque puede dañar el conector de control de corriente con autoalineación del chasis.

4. Slide the fan assembly into the chassis until the faceplate of the tray is flush with the face of the N5 chassis. If there is any strong resistance, remove the fan assembly and reinsert it.

Figure 3-12 Reinstalling the Fan Assembly



1	Captive Phillips-head screws (4)	**3**	Fan assembly
2	Fan assembly handles (2)	**4**	Self-aligning power connector

5. Once the tray assembly is in place, tighten the four slotted screws (see Figure 3-12) to secure the tray to the N5 chassis.
6. Plug the other end of the 20 A power cord into a dedicated 20 A/120 Vac receptacle. Set the **0/I** power switch on the front panel of the power supply to **I**.
7. Ensure that all fans in the fan assembly are operating properly. The fan status LED located at the top-left front of the chassis will turn green when power is received from the power supply modules. For more information on the power supply LEDs (Power and Fan), refer to "LANVIEW LEDs" on page 2-4.

If you experience any problems with this installation, contact Enterasys Networks for assistance.

A

Specifications

This appendix provides the specifications for the following:

For information about...	Refer to page...
Matrix N5 Chassis	A-2
7C205-1 System Power Supply Module	A-3
N-POE-1200W Power Supply Module	A-3
7C405 Fan Assembly	A-4
AC Power Cord	A-5
Torque Values	A-5
Environmental Requirements	A-6
Regulatory Compliance	A-6

Enterasys Networks reserves the right to change the specifications at any time without notice.

Matrix N5 Chassis

Table A-1 provides the physical and power specifications for the Matrix N5 Chassis.

Table A-1 Matrix N5 Chassis Specifications

Item	Specification	
Module Slots		
Slots 1 through 5	Slots that support all DFE-Gold and DFE-Platinum series modules	
Power Supply Slots		
PS 1 and PS 2	Slots for 7C205-1 (1200 W) system power supplies	
POE 1 through POE 4	Slots for optional N-POE-1200W DC power supply modules	
Physical		
Dimensions	62.4 H x 44.1 W x 55.8 D (cm) 24.6 H x 11.35 W x 22.0 D (in.)	
Approximate Weight:		
Chassis with fan assembly Chassis including packaging	29.6 kg (65.0 lb) 52.7 kg (116.0 lb)	
MTBF	357,927 hours	
Electrical		
AC power requirement per AC INLET connection:	Accepts up to two (2) 7C205-1 power supplies; Each 7C205-1 power supply accepts (1) IEC320 C19 shielded power cord plug. Accepts up to four (4) N-POE-1200W power supplies; Each N-POE-1200W power supply accepts (1) IEC320 C19 shielded power cord plug. Each input (AC INLET 1 through INLET 4) require the following power for N-POE-1200W power supplies installed in slots POE 1 through POE 4, respectively.	
Input Frequency: Input Voltage Range/Max. Amp.:	50/60 Hz 100 to 125 Vac ~ 15 A	50/60 Hz 200 to 240 Vac ~ 8 A

7C205-1 System Power Supply Module

Table A-2 provides the physical and electrical specifications for the 7C205-1.

Table A-2 7C205-1 Specifications

Item	Specification
Physical	
Dimensions	12.7 H x 21.0 W x 27.94 D (cm) 5.0 H x 8.27 W x 11.0 D (in.)
Approximate Weight (Unit)	9.1 kg (20.0 lb)
MTBF	223,900 hours
Electrical	
Input Frequency:	50 to 60 Hz
Input: (Voltage/Current):	100 to 125 Vac: 16 A 200 to 240 Vac: 8 A
Input Power	1200 W

N-POE-1200W Power Supply Module

Table A-3 provides the electrical and physical specifications for the N-POE-1200W.

Table A-3 N-POE-1200W Specifications

Item	Specification
Electrical	
Input Frequency:	50 to 60 Hz
Input: (Voltage/Current):	100 to 125 Vac: 15 A 200 to 240 Vac: 8 A
Input Power	1200 W

Table A-3 N-POE-1200W Specifications (continued)

Item	Specification
Physical	
Dimensions	4.1 H x 12.7 W x 25.4 D (cm) 1.6 H x 5.0 W x 10.0 D (in.)
Over-Temperature Protection (OTP)	Yes. Protects against • excessive temperatures caused by inadequate (blocked) airflow, • fan failure, or • excessive air inlet temperature.
Approximate Weight (Unit)	2.1 kg (4.6 lb)
MTBF	247,000 Hours

7C405 Fan Assembly

Table A-4 provides the physical specifications for the 7C405 fan assembly.

Table A-4 7C405 Fan Assembly Physical Specifications

Item	Specification
Dimensions:	40.08 H x 32.0 W x 4.62 D (cm) 17.78 H x 12.6 W x 1.796 D (in.)
Weight:	5.73 kg (12.6 lb)
MTBF (Predicted):	3,699,046 hours

AC Power Cord

Any AC power cord used to connect an AC power source to the AC Line connector of a 7C205-1 AC power supply or N-POE-1200W power supply module must meet the specifications listed in Table A-5.

Table A-5 7C205-1 AC Power Cord Specifications

Item	Specification
Cord set approval	The cord set must be approved for use by the governing authority in the country of installation.
Inlet Connector	IEC 320 C19 power cord connector. This is for connection to an AC Inlet connector on the 7C205-1.
Plug Type	As required in country of installation
Wire Gauge	12 AWG or 2 mm^2 wires
Voltage Rating	250 Volts minimum
Power Cord Construction	Power cord must be shielded and constructed with molded connectors at both ends.

Torque Values

The following table describes the recommended torque values to use when installing the N5 chassis using standard threaded fastener machine screws and bolts.

Table A-6 Recommended Torque Values by Screw Size

Screw Size		Torque in Pounds			Bit Size
English	Metric	-%5	Nominal	+%5	
N/A	N/A	1.42	1.5	1.57	0
2 – 56	1.5	2.85	3.0	3.15	0
4 – 40	2.5	4.75	5.0	5.25	0/1
6 – 32	3.5	8.55	9.0	9.45	1
8 – 32	4.5	17.10	18.0	18.90	2
10 – 32	5	30.40	32.0	33.60	2
1/4 – 20	6.5	63.65	67.0	70.35	3

Environmental Requirements

Table A-7 provides the environmental specifications for the N5 chassis system.

Table A-7 Environmental Specifications

Item	Specification
Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity:	5% to 90% (non-condensing)

Regulatory Compliance

Table A-8 provides the safety and electromagnetic compatibility (EMC) requirements met by this N5 chassis system:

Table A-8 Compliance Standards

Regulatory Compliance	Standards
Safety:	UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.
Electromagnetic Compatibility (EMC):	47 CFR Parts 2 and 15, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3.